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Amdt. dated July 29, 2005
Reply to Office action of June 2, 2005

Serial No. 09/845,065
Docket No. STL920000073US2
Firm No. 0055.0031

REMARKS/ARGUMENTS

1. Claims 1-11, 13-25, 27-39, and 41-42 are Patentable Over the Cited Art

The Examiner rejected claims 1-11, 13-25, 27-39, and 41-42 as anticipated (35 U.S.C. §102(e)) by Ireland (U.S. Patent No. 6,266,666). Applicants traverse.

Independent claims 1, 15, and 29 concern enabling access to data, and require: receiving a call from a client to invoke a remote interface method; accessing, with a remote interface implementation, parameters from the received call in response to the invocation of the remote interface method; generating a stored procedure call with the accessed parameters as input parameters of the stored procedure; transferring the stored procedure call to a stored procedure named by the call to execute; receiving output from the stored procedure; inserting the received output from the stored procedure into a data object; and returning the data object to the client.

During the phone interviews, the Examiner continued his argument that the cited PowerBuilder of Ireland teaches the client and that the component transaction server (CTS) application layer in response to a request from the PowerBuilder would necessarily generate a stored procedure to obtain requested data from the database. The Examiner again emphasized the cited col. 9, lines 48-55 and col. 10, lines 45-49 of Ireland as disclosing the claim requirements, which are cited on pg. 10 of the Final Office Action.

Applicants traverse because nowhere does the cited Ireland disclose or mention that the CTS generate a stored procedure in response to a client invoking a remote interface method and then transferring the stored procedure call and receiving output from the stored procedure.

The cited cols. 9-10 mentions that the PowerBuilder sends a query requesting stored procedures and the CTS in response enumerates components and methods on the components at the transaction server. The CTS returns this list of components "in effect making them appear as storage procedures to PowerBuilder". (Ireland, col. 9, lines 50-56). Nowhere do the cited cols. 9-10 disclose that the CTS generates a stored procedure in response to a call invoking a remote interface method from the client. In fact, the cited Ireland teaches away from this claim requirement because the cited Ireland mentions that the CTS "enumerates" on components and

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methods, and makes them appear as a stored procedure. Thus, the CTS has components that are not stored procedure but are made to appear as a stored procedure. This indicates that the CTS does not invoke a stored procedure to access request information, but uses some alternative data access techniques. In fact, Ireland mentions data access techniques used by CTS that are not stored procedures - "CTS provides APIs in C, ActiveX and Java, that allow a component writer to describe, populate, and deliver tabular results to the client." (Ireland, col. 17, line 65 to col. 18, line 1)

Other cited parts of Ireland also do not disclose that the CTS generates a stored procedure and in fact indicate the opposite, i.e., that CTS mimics, but does not use stored procedures. For instance, the cited col. 10 mentions that the argument information can be executed against the component residing on the middle tier, i.e., the CTS, and not against the data set and that data is returned to the client as a tabular set. Again, nowhere is there any disclosure that the CTS generates a stored procedure call and receives output from the stored procedure to insert into a data object to return to the client.

During the phone interview, the Examiner said he believed that CTS operates by calling a stored procedure to implement the stored procedure requested by the PowerBuilder. Applicants submit that this position by the examiner is not supported in the cited Ireland patent, which appears to teach the opposite of what is claimed - that CTS mimics a stored procedure, but does not generate and transfer one to implement the client request as claimed. Ireland mentions the CTS mimics a database server (Col. 13, lines 33-40) and tries to look like a database stored procedure and send back a result set as if it came from a stored procedure. (Ireland, col. 17, line 62 to col. 18, line 11). However, the Examiner has not cited any part of Ireland or other art that teaches or suggests that the CTS generates a stored procedure call and receives output from the stored procedure to insert into a data object an return to the client.

Applicants further repeat the arguments from the First Response, dated January 20, 2005 to the extent the Examiner repeats rejections from the First Office Action dated September 20, 2004.

Accordingly, claims 1, 15, and 29 are patentable over the cited art because the cited Ireland does not disclose all the claim requirements.

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Claims 2-11, 16-25, and 30-39 are patentable over the cited art because they depend from one of claims 1, 15, and 29. The following dependent claims provide additional grounds of patentability over the cited art for the reasons discussed below.

Claims 2, 16, and 30 depend from claims 1, 15, and 29 and further require that the stored procedure executes in a database server and generates the output, wherein the output is capable of comprising output that is a member of the set of output comprising one or more result sets of data from the database table and one or more output parameters resulting from stored procedure operations performed on data in the database table.

The Examiner cited col. 9, lines 47-55 and col. 14, lines 39-40 as disclosing the claim requirement that the stored procedure executes in a database server and generates the output. (Final Office Action, pgs. 3-5) Applicants traverse.

The cited col. 9 discusses how a method on a component is called to look like a stored procedure so that returns the result set. The cited col. 14 mentions discusses how a client can send a request to a server. Although the cited col. 9 discusses how the result may look like a stored procedure result set, nowhere does the cited Ireland disclose that the output result set is returned from a stored procedure executing in a database. In fact, Ireland appears to teach away from this requirement in its statement that "[h]ere, the client thinks its is talking to a database server, but is actually talking to the CTS". (Ireland, col. 13, lines 33-40). "This includes the ability for a CTS method to send back tabular result sets as if these came from a database table." (Ireland, col. 17, lines 60-65)

Accordingly, claims 2, 16, and 30 provide additional grounds of patentability over the cited art because the cited Ireland does not disclose all the dependent claim requirements.

Claims 3, 17, and 31 depend from claims 1, 15, and 29 and further require that the remote interface implementation process an input mapping to determine the parameters in the client call to use as input parameters to the stored procedure call. The Examiner cited col. 12, lines 8-26, 54-59, 64-67, col. 13, lines 1-30, and col. 16, lines 62-67 as disclosing the claim requirements. (Final Office Action, pg. 4)

The cited col. 12 mentions class metadata that is used to load the components metadata into a hash table. The key for the hash table is a scoped method name. Although the cited col.

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12 discusses a hash table, nowhere does the cited col. 12 anywhere disclose or mention that the hash table is used to map parameters in the client call to input parameters in a stored procedure call as claimed.

The cited col. 13 mentions a table of commands. The cited col. 16 mentions invoking a method and calling a marshaller when a parameter is needed. Nowhere do these cited cols. 13 and 16 anywhere disclose or mention a mapping to map parameters in the client call to input parameters in a stored procedure call as claimed.

Moreover, because the CTS does not generate and transfer a stored procedure, it would not have a need for an input mapping to determine parameters in the client to use as input to the stored procedure call.

Accordingly, claims 3, 17, and 31 provide additional grounds of patentability over the cited art because the cited Ireland does not disclose all the dependent claim requirements.

Claims 5, 19, and 33 depend from claims 1, 15, and 29 and further require processing an output mapping indicating how the stored procedure output is mapped to the data object. The examiner cited col. 10, lines 36-42 of Ireland as disclosing the additional requirements of these claims. (Final Office Action, pg. 4) Applicants traverse.

The cited col. 10 mentions generating a component and that for a Java component, a stub is generated that resembles a java class that JDBC for sending requests to the component transaction server for receiving result sets back.

Nowhere does the cited col. 10 anywhere disclose or mention the claim requirement of an output mapping to map stored procedure output to a database object. Instead, the cited col. 10 discusses generating a component graphically.

Further, col. 10 mentions that the data is returned to the client as a tabular data set. Nowhere does the cited Ireland disclose processing an output mapping on how stored procedure output maps to a data object.

Yet further, since the cited Ireland does not disclose obtaining data from a stored procedure as claimed, there would be no need for the claimed output mapping.

Accordingly, claims 5, 19, and 33 provide additional grounds of patentability over the cited art because the cited Ireland does not disclose all the dependent claim requirements.

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Claims 6-12, 20-26, and 34-40 are patentable over the cited art because they depend from the base claims 1, 15, and 29 and provide additional details concerning the stored procedure, data object and other elements, which in combination with the base claims provide further grounds of patentability over the cited art.

Independent claims 13, 27, and 41 concern making stored procedure programs available to application programs, and require: determining one stored procedure program generating output needed by one application program; generating a remote interface implementation to respond to a remote interface method capable of receiving a call from the application program including data and invoking a stored procedure in a database server with the data from the application program used as input; and generating an output mapping for the remote interface implementation to use to determine how to insert the stored procedure output into a data object that may be used by the application program.

The Examiner cited blocks 210, 220, and 230 in FIG. 2 and col. 12, lines 29-61 of Ireland as disclosing the claim requirement of generating a remote interface implementation to respond to a remote interface method capable of receiving a call from the application program including data and invoking a stored procedure in a database server with the data from the application program used as input. (Final Office Action, pg. 7) Applicants traverse.

The cited block 210 is a thin client, block 220 is a middle tier comprising the CTS, and block 230 is a back end database server. (FIG. 2, and col. 6, lines 3-15). The cited col. 12 mentions that a command class presents a request from a client. The command class is a collection of static methods. The runCommands() is called by the server's request handler when receiving a client request to determine the type of command.

Nowhere do the cited col. 12 and FIG. 2 anywhere disclose the claim requirements of generating a remote interface implementation to respond to a remote interface method capable of receiving a call from the application program including data and invoking a stored procedure in a database server with the data from the application program used as input. Nowhere does the cited Ireland anywhere disclose invoking a stored procedure in a database server in response to a call from the application program as claimed.

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As discussed, the cited Ireland does not disclose that the CTS application have a remote interface implementation to receive a call from the application and invoke a stored procedure in a database server as claimed. In fact, the cited Ireland teaches away from invoking a stored procedure in the database server because Ireland mentions that "the information can be executed against the component residing on the middle tier, not against the database." (Ireland, col. 10, lines 5-10) Thus, these independent claims provide grounds of distinction over the cited art for the reasons discussed above with respect to claim 1.

The Examiner cited col. 10, lines 13-20, 36-42 and col. 8, lines 16-31 as disclosing the claim requirement of generating an output mapping for the remote interface implementation to use to determine how to insert the stored procedure output into a data object that may be used by the application program. (Final Office Action, pg. 7)

The cited col. 10 mentions that the design allows a component to return a result back to the client, and provides an API for pushing a data set to clients, and interface calls are provided for describing every column, binding variables to those columns and then sending the data. On the client side, the user is able to generate a component graphically and for a Java component, the system generates a stub. The cited col. 8 mentions that the result set the CTS provides is a tabular result set and is equivalent to a database cursor. The CTS manages updates to the result set.

Nowhere do the cited cols. 8 and 10 disclose the claim requirement of generating a mapping for the remote interface to determine how to insert stored procedure output into a data object for use by the application program. Instead, the cited cols. 8 and 10 discuss returning a result set, but do not disclose mapping stored procedure output to a data object for use by an application program as claimed.

Moreover, because the cited Ireland does not disclose receiving output from a stored procedure nor invoking a stored procedure, it further does not disclose inserting stored procedure output into a data object.

Accordingly, claims 13, 27, and 41 are patentable over the cited art because the cited Ireland does not disclose all the claim requirements.

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Claims 14, 28, and 42 are patentable over the cited art because they depend from claims 13, 27, and 41, which are patentable over the cited art for the reasons discussed above.

2. Claims 12, 26, and 40 are Patentable Over the Cited Art

The Examiner rejected claims 12, 26, and 40 as obvious (35 U.S.C. §103) over Ireland in view of Clegg (U.S. Patent No. 6,356,946). Applicants traverse and submit that these claims are patentable over the cited art because they depend from claims 1, 15, and 29, which are patentable over the cited art for the reason discussed above.

1. Added Claims 43-45 are Patentable Over the Cited Art

Applicants added claims 43-45 that depend from claims 1, 15, and 29 and further require that the stored procedure executes in a database server and that the received output comprises output from a database, wherein the database server and the remote interface implementation are implemented on a same machine, wherein the remote interface implementation performs the operations of generating the stored procedure call, transferring the stored procedure call, receiving the output, inserting the received output from the stored procedure, and returning the data object to the client.

The Specification discloses these added requirements on pg. 5, lines 2-6 and pg. 15, para. [0048].

The Examiner indicated that he would consider allowing a claim that had the operations performed by the remote interface implementation, database and stored procedure on the same machine. Applicants have added the discussed claims 43-45 and submit that such claims are patentable over the cited art for the reasons the Examiner found and because they depend from claims 1, 14, and 29, which are patentable over the cited art for the reasons discussed above.

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Conclusion

For all the above reasons, Applicant submits that the pending claims 1-45 are patentable over the art of record. Applicants submit the additional claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0460.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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